

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for creating a permanent image on a substrate, comprising:

ink-jetting a black- or color-containing ink-jet ink composition onto a substrate;

ink-jetting a fusible composition carried by a liquid vehicle onto said substrate, said fusible composition comprising a polymer backbone having an acid side group and a substituted amide side group attached to the polymer backbone, said substituted amide side group having the formula CONHR , wherein R is $(\text{PEG})_n$, wherein n is from 3 to 1,000; or R is $(\text{C})_m\text{R}_2$, where m is from 0 to 18, and R_2 is selected from the group consisting of H, branched or straight chained lower alkyl groups, aryl groups, and branched or straight chained lower alkyl aryl groups, with the proviso that lower alkyl is 2 for straight chained lower alkyl groups and from 3 to 10 for branched or straight chained lower alkyl groups;

contacting said ink-jet ink composition and said fusible composition such that said ink-jet ink composition and said fusible composition are in the form of a liquid mixture on the substrate; and

fusing said liquid mixture on said substrate thereby forming an image that undergoes minimal transference of black or color upon chemical or mechanical abrasion as measured by mOD values ranging between 0 and 100.

2. (original) A method as in claim 1 wherein the substrate is not pre-coated with said fusible composition prior to said ink-jetting steps.

3. (original) A method as in claim 1 wherein the acid side group and the amide side group is provided by opening a maleic anhydride ring with a nitrogen containing composition.

4. (original) A method as in claim 1 wherein R is (PEG)_n.

5. (original) A method as in claim 1 wherein R is (C)_mR₂.

6. (original) A method as in claim 1 wherein said fusing step is flash fusing and is carried out at from 0.5 to 4 seconds.

7. (original) A method as in claim 1 further comprising the step of providing a single ink-jet printer device, said device comprising a flash fuser, the black- or color-containing ink-jet ink composition, and the fusible composition.

8. (original) A method as in claim 1 wherein said fusible composition has a glass transition temperature ranging from between about 50°C to about 90°C.

9. (original) A method as in claim 1 wherein the liquid vehicle comprises water and a member selected from the group consisting of biocides, viscosity modifiers, materials for pH adjustment, sequestering agents, preservatives, surfactants, solvents, co-solvents, and mixtures thereof.

10. (original) A method as in claim 1 wherein said polymer backbone further comprises an additional organic group appended thereto, said organic group selected

from the group consisting of aryl groups, straight chained alkyl groups having from 2 to 50 carbon atoms, branch chained alkyl groups having from 3 to 50 carbon atoms, alkyl/aryl combinations having from 5 to 50 carbons atoms, and combinations thereof.

11. (original) A method as in claim 1 wherein the contacting step occurs on the substrate.

12. (original) A method as in claim 1 wherein the contacting step occurs prior to the ink-jetting steps.

13. (original) A method for creating a permanent image on a substrate, comprising:

ink-jetting a black- or color-containing ink-jet ink composition onto a substrate;

ink-jetting a fusible composition carried by a liquid vehicle onto said substrate, said fusible composition comprising a polymer backbone having an acid side group and an amide side group attached to the polymer backbone, said amide side group having the formula CONH_2 ;

contacting said ink-jet ink composition and said fusible composition such that said ink-jet ink composition and said fusible composition are in the form of a liquid mixture on the substrate; and

fusing said mixture on said substrate thereby forming an image that undergoes minimal transference of black or color upon chemical or mechanical abrasion as measured by mOD values ranging between 0 and 100.

14. (original) A method as in claim 13 wherein the substrate is not pre-coated with said fusible composition prior to said ink-jetting steps.

15. (original) A method as in claim 13 wherein the acid side group and the amide side group is provided by opening a maleic anhydride ring with a nitrogen containing composition, resulting in the CONH₂ side chain.

16. (original) A method as in claim 13 wherein said fusing step is flash fusing and is carried out at from 0.5 to 4 seconds.

17. (original) A method as in claim 13 further comprising the step of providing a single ink-jet printer device, said device comprising a flash fuser, the black- or color-containing ink-jet ink composition, and the fusible composition.

18. (original) A method as in claim 13 wherein said fusible composition has a glass transition temperature ranging from between about 50°C to about 90°C.

19. (original) A method as in claim 13 wherein the liquid vehicle comprises water and a member selected from the group consisting of biocides, viscosity modifiers, materials for pH adjustment, sequestering agents, preservatives, surfactants, solvents, co-solvents, and mixtures thereof.

20. (original) A method as in claim 13 wherein said polymer backbone further comprises an additional organic group appended thereto, said organic group selected from the group consisting of aryl groups, straight chained alkyl groups

having from 2 to 50 carbon atoms, branch chained alkyl groups having from 3 to 50 carbon atoms, alkyl/aryl combinations having from 5 to 50 carbons atoms, and combinations thereof.

21. (original) A method as in claim 13 wherein the contacting step occurs on the substrate.

22. (original) A method as in claim 13 wherein the contacting step occurs prior to the ink-jetting steps.

23. (original) A method for creating a permanent image on a substrate, comprising:

Ink-jetting a black- or color-containing ink-jet ink composition onto a substrate;

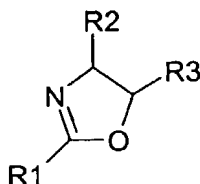
ink-jetting a fusible composition onto said substrate, said fusible composition comprising a member selected from the group consisting of oxazolines and polyoxazolines;

contacting said ink-jet ink composition and said fusible composition such that said ink-jet ink composition and said fusible composition are in the form of a liquid mixture on the substrate; and

fusing said mixture on said substrate thereby forming an image that undergoes minimal transference of black or color upon chemical or mechanical abrasion as measured by mOD values ranging between 0 and 100.

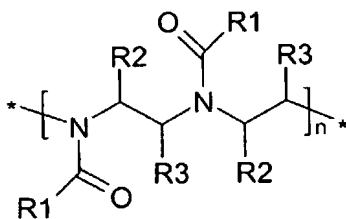
24. (original) A method as in claim 23 wherein the substrate is not pre-coated with said fusible composition prior to said ink-jetting steps.

25. (original) A method as in claim 23 wherein said fusible composition contains an oxazoline having the following structure:



wherein R1, R2, and R3 are, independently, H, straight chained alkyl groups having from 2 to 50 carbon atoms, branch chained alkyl groups having from 3 to 50 carbon atoms, aryl groups, alkyl/aryl groups having from 5 to 50 carbon atoms, and combinations thereof.

26. (original) A method as in claim 23 wherein said fusible composition comprises a polyoxazoline having the following structure:



wherein R1, R2, and R3 are, independently, H, straight chained alkyl groups having from 2 to 50 carbon atoms, branch chained alkyl groups having from 3 to 50 carbon

atoms, aryl groups, alkyl/aryl groups having from 5 to 50 carbon atoms, and combinations thereof.

27. (original) A method as in claim 23 wherein said fusing step is flash fusing and is carried out at from 0.5 to 4 seconds.

28. (original) A method as in claim 23 further comprising the step of providing a single ink-jet printer device, said device comprising a flash fuser, the black- or color-containing ink-jet ink composition, and the fusible composition.

29. (original) A method as in claim 23 wherein said fusible composition has a glass transition temperature ranging from between about 50°C to about 90°C.

30. (currently amended) A method as in claim 23 wherein the fusible composition is carried by a liquid vehicle comprises comprising water and a member selected from the group consisting of biocides, viscosity modifiers, materials for pH adjustment, sequestering agents, preservatives, surfactants, solvents, co-solvents, and mixtures thereof.

31. (original) A method as in claim 23 wherein the contacting step occurs on the substrate.

32. (original) A method as in claim 23 wherein the contacting step occurs prior to the ink-jetting steps.

33. (currently amended) A system for creating a permanent image on a paper substrate, comprising:

an ink-jettable black- or color-containing ink-jet ink configured for being ink-jetted on a substrate;

an ink-jettable clear fusible composition configured for being ink-jetted on a substrate, said clear fusible composition consisting essentially of a fusible composition in a liquid vehicle;

a substrate configured for receiving the black- or color-containing ink-jet ink and the fusible composition upon each being ink-jetted onto the substrate such that the black- or color-containing ink-jet ink and the fusible composition are a mixed liquid on the substrate; and

a fuser configured for fusing the mixed liquid on the paper substrate.

34. (currently amended) A system as in claim 33 wherein the substrate is a paper substrate that is not coated with an organic polymer.

35. (original) A system as in claim 33 wherein the fusible composition comprises a polymer backbone having an acid side group and an amide side group attached to the polymer backbone, said amide side group having the formula CONHR , with the proviso that R is other than H.

36. (original) A system as in claim 33 wherein the fusible composition comprises a polymer backbone having an acid side group and an amide side group attached to the polymer backbone, said amide side group having the formula CONH_2 .

37. (original) A system as in claim 33 wherein the fusible composition comprises a member selected from the group consisting of oxazolines and polyoxazolines.

38. (original) A system as in claim 33 wherein the ink-jetable black- or color-containing ink-jet ink and the ink-jetable fusible composition are configured to be mixed on the substrate.

39. (original) A system as in claim 33 wherein the ink-jetable black- or color-containing ink-jet ink and the ink-jetable fusible composition are configured to be mixed prior to ink-jetting.